APPLICATION FOR CERTIFICATION

El Segundo Power Redevelopment Project

December 2000



FACILITY DESCRIPTION AND ENVIRONMENTAL ANALYSIS

This CD-ROM (Volume 1) contains the text sections and graphic pieces referenced in the following sections:

- 1.0 Executive Summary
- 2.0 Project Need
- 4.0 Alternatives
- 5.0 Environmental Information
 - 5.1 Introduction
 - 5.2 Air Quality
 - 5.3 Geological Hazards and Resources
 - 5.4 Soils and Agricultural Resources
 - 5.5 Water Resources
 - 5.6 Biological Resources
 - 5.7 Cultural Resources
 - 5.8 Paleontological Resources
 - 5.9 Land Use
 - 5.10 Socioeconomics
 - 5.11 Traffic and Transportation
 - 5.14 Waste Management
 - 5.15 Hazardous Materials Handling
 - 5.16 Public Health
 - 5.17 Worker Safety
 - 5.18 Transmission Line Safety and Nuisance
 - 5.19 Reliability and Efficiency
- 6.0 Financial Information

In consideration of file size limitations, Section 3.0 (Facility Description), Section 5.12 (Noise), and Section 5.13 (Visual) are presented on Volume (1B). Please note that the entire Table of Contents is presented in Volume 1A.

<u>Secti</u>	<u>ection</u>						
1.0	EXE	EXECUTIVE SUMMARY					
	1.1	.1 INTRODUCTION					
	1.2	PROJE	ECT OVERVIEW	1-2			
	1.3	FACIL	ITY LOCATION AND DESCRIPTION	1-3			
		1.3.1	Facility Location	1-3			
		1.3.2	•	1-4			
		1.3.3	•	1-5			
		1.3.4	<i>y</i>	1-6			
		1.3.5	On-Site Transmission	1-6			
	1.4	PROJE	ECT SCHEDULE	1-6			
	1.5		ECT OWNERSHIP	1-6			
	1.6		RONMENTAL CONSIDERATIONS	1-7			
		1.6.1	Key Issues in the Environmental Disciplines	1-8			
	1.7	KEY BENEFITS					
		1.7.1		1-8			
		1.7.2	1 2	1-10			
		1.7.3	Tax Base	1-10			
		1.7.4	Efficient Energy	1-10			
	1.8	LIST C	OF CONTRIBUTORS	1-10			
2.0	PROJ	PROJECT OBJECTIVES					
	2.1	NEED CONFORMANCE AND RELIABILITY					
		2.1.1	Historical Overview of Need Conformance and Reliability	2-1			
			2.1.1.1 Warren Alquist Act	2-1			
			2.1.1.2 Senate Bill 110	2-2			
		2.1.2	Contemporary Need Conformance and Electric System Reliability	2-4			
			2.1.2.1 Reliability	2-4			

Section	<u>n</u>				Page	
		2.1.3	Need		2-5	
			2.1.3.1	California Energy Commission Articulation	2.5	
			2.1.3.2	of Need ISO Articulation of Need	2-5 2-7	
			2.1.3.3	Federal Energy Regulatory Commission Articulation of Need		
			2.1.3.4	CPUC and Electricity Oversight Board (EOB) Articulation of Need	2-8	
			2.1.3.5	Regional Need	2-9	
	2.2		CT OBJEC		2-9 2-10	
2.3		ESPR QUALITIES				
		2.3.1	Means by	y Which ESPR Minimizes Impacts and Maximizes		
			•	to the Environment	2-10	
		2.3.2		y Which ESPR Facilitates Timely Analysis and		
		222	Decision		2-11	
		2.3.3	Critical I	ssues or Decisions for ESPR	2-11	
3.0	FACI	ON AND LOCATION	3.2-1			
	3.1	INTRO	DUCTION	1	3.1-1	
	3.2	FACIL	ATION	3.2-1		
3.3		SITE DESCRIPTION			3.3-1	
		3.3.1	Topograp	nhv	3.3-1	
		3.3.2		Setting and Seismology	3.3-1	
			3.3.2.1	Subsurface Conditions	3.3-2	
			3.3.2.2	Seismic Conditions	3.3-3	
			3.3.2.3	Liquefaction Potential	3.3-3	
			3.3.2.4	Slope Stability	3.3-5	
			3.3.2.5	Shoreline Erosion	3.3-6	
		3.3.3	Hydrolog	gical Setting	3.3-7	
			3.3.3.1	Surface Water	3.3-7	
			3.3.3.2	Groundwater	3.3-8	
	3.4	FACIL	ITY DESC	RIPTION	3.4-1	

Section				Page
	3.4.1	Overview	7	3.4-1
		3.4.1.1 R	Reference Literature	3.4-2
	3.4.2 3.4.3	Site Layo	out ion Turbine Generator, HRSG, and	3.4-2
		Steam Tu	· · · · · · · · · · · · · · · · · · ·	3.4-3
		3.4.3.1	Combustion Turbine Generators	3.4-3
		3.4.3.2	Heat Recovery Steam Generators	3.4-4
		3.4.3.3	Steam Turbine Generator	3.4-4
	3.4.4	•	ection System	3.4-5
	3.4.5	Major Ele	ectrical Equipment	3.4-5
		3.4.5.1	AC Power Transmission	3.4-5
		3.4.5.2	AC Power Distribution	3.4-6
		3.4.5.3	DC Power Supply	3.4-6
		3.4.5.4	Essential Service AC (UPS)	3.4-7
		3.4.5.5	Loss of AC Power	3.4-7
	3.4.6	Fuel Gas	System	3.4-8
	3.4.7	Water Su	pply and Treatment	3.4-8
		3.4.7.1	Water Supply Requirements	3.4-9
		3.4.7.2	Water Quality and Balance	3.4-9
		3.4.7.3	Water Treatment Requirements	3.4-11
		3.4.7.4	Wastewater Discharge	3.4-12
	3.4.8	Waste Ma	anagement	3.4-13
	3.4.9		nent and Disposal of Hazardous Materials	
		and Haza	rdous Wastes	3.4-14
		3.4.9.1	Chemicals	3.4-14
		3.4.9.2	Hazardous Wastes	3.4-16
	3.4.10	Emission	s Control and Montoring Equipment	3.4-17
		3.4.10.1	NO _X Emissions	3.4-18
		3.4.10.2	CO Emissions	3.4-19
		3.4.10.3	VOC Emissions	3.4-20
		3.4.10.4	Particulates	3.4-20

Section				Page	
		3.4.10.5	Emission Monitoring	3.4-20	
	3.4.11	Fire Prote	ection	3.4-20	
	3.4.12	Plant Aux	xiliaries	3.4-22	
		3.4.12.1	Lighting	3.4-22	
		3.4.12.2	Grounding	3.4-23	
		3.4.12.3	Cathodic Protection and Lightning Protection	3.4-23	
		3.4.12.4		3.4-24	
	3.4.13	Heating,	Ventilating, and Air Conditioning	3.4-24	
	3.4.14	Plumbing	<u> </u>	3.4-25	
3.5	FACILITY CIVIL/STRUCTURAL FEATURES				
	3.5.1	Power Bl	ock	3.5-1	
	3.5.2	Stacks		3.5-1	
	3.5.3	Buildings	S	3.5-1	
	3.5.4	Yard Tan	ks	3.5-1	
	3.5.5	Roads	Roads		
	3.5.6	Fencing		3.5-2	
	3.5.7	_	nage	3.5-2	
	3.5.8		Sewer System	3.5-3	
	3.5.9	•	•	3.5-3	
	3.5.10	Perimeter Wall		3.5-5	
3.6	TRANS	TRANSMISSION FACILITIES			
	3.6.1	On-Site T	Transmission Facilities	3.6-1	
		3.6.1.1	Electrical Interconnection Points	3.6-1	
	3.6.2	Off-Site	Γransmission Facilities	3.6-3	
		3.6.2.1	Electric Transmission Lines, Descriptions and	262	
		2622	Operation Power Flow Studies	3.6-3	
		3.6.2.2	Power Flow Studies Compliance with Utility Policibility and	3.6-5	
		3.6.2.3	Compliance with Utility Reliability and Planning Criteria	3.6-6	
37	DIDEI I	NEC		3 7_1	

Section				Page
	3.7.1 3.7.2 3.7.3 3.7.4 3.7.5	Potable 'Sanitary	tion Water Supply Line Water Supply Line Sewer Line Ammonia Line	3.7-1 3.7-2 3.7-2 3.7-2 3.7-3
3.8	SITE P	REPARA]	TION	3.8-1
	3.8.1 3.8.2 3.8.3 3.8.4	Demoliti Site Prep	nolition Activities ion Activities paration Schedule and Workforce paration Plans	3.8-1 3.8-2 3.8-3 3.8-3
		3.8.4.1 3.8.4.2 3.8.4.3 3.8.4.4 3.8.4.5 3.8.4.6 3.8.4.7 3.8.4.8	Mobilization Site Preparation Office Facilities Site Preparation Parking Laydown and Storage Emergency Facilities Site Preparation Utilities Site Services Demolition Materials and Equipment	3.8-3 3.8-4 3.8-4 3.8-4 3.8-4 3.8-5 3.8.5
3.9	PROJE	CT CONS	TRUCTION	3.9-1
	3.9.1	Power P	lant Facility	3.9-1
		3.9.1.1 3.9.1.2	Construction Schedule and Workforce Construction Plans	3.9-1 3.9-1
	3.9.2	Pipeline	S	3.9-12
		3.9.2.1 3.9.2.2 3.9.2.3	Introduction Construction Schedule and Workforce Construction Plans	3.9-12 3.9-12 3.9-12
	3.9.3	Land Di	sturbance	3.9-14
		3.9.3.1	Earthmoving Offsite	3.9-14
3.10	FACIL	ITY OPER	ATION	3.10-1
	3.10.1	Introduc	tion	3.10-1

Section	<u>on</u>				Page
		3.10.2	Power Pla	ant Facility	3.10-1
			3.10.2.1	Operation with Seasonal Variation in Ambient Temperature	3.10-1
			3.10.2.2	Annual Operating Practices	3.10-1
			3.10.2.2	Control Philosophy	3.10-2
			3.10.2.4	Degree of Automation	3.10-2
			3.10.2.5	Centralized Control	3.10-2
			3.10.2.6	Distributed Control and Monitoring System	
			3.10.2.7	(DCS) Reliability	3.10-3 3.10-3
		3.10.3	Pipelines		3.10-4
3.11	FACI	LITY CL	OSURE		3.11-1
		3.11.1	Temporar		3.11-1
		3.11.2	Permanen		3.11-1
		3.11.3	Closure M	ditigation	3.11-1
3.12	FACILITY DESIGN LAWS, ORDINANCES, REGULATIONS AND STANDARDS			3.12-1	
		3.12.1	Overview		3.12-1
		3.12.2	Facility D	Design	3.12-5
			3.12.2.1	Civil and Structural Engineering	3.12-6
			3.12.2.2	Mechanical Engineering	3.12-6
			3.12.2.3	Electrical Engineering	3.12-6
		3.12.3		odes and Standards for Construction	2.12
			and Desig	gn	3.12-6
4.0	ALTE	ALTERNATIVES			
	4.1			AND OVERVIEW	4-1
	4.2		CT OBJEC'		4-3
	4.3		CT DESCR		4-3
	4.4	NO PR	OJECT AL	ΓERNATIVE	4-4
		4.4.1		Transmission	4-5
		4.4.2	Continue	d Dependency on Aged, Unreliable Units 1 and 2	4-5

Section			Page		
	4.4.3 4.4.4	Greater Impacts per Megawatt Produced Conclusion	4-5 4-6		
	1. 1. 1	Collegion	1 0		
4.5	CONSI	DERATION OF ALTERNATIVE GENERATING			
	TECHN	NOLOGIES	4-6		
	4.5.1	Selection Methodology	4-6		
	4.5.2	Natural Gas-Fired Conventional Combined-Cycle	4-7		
	4.5.3	Natural Gas-Fired Conventional Furnace/Boiler Steam			
		Turbine-Generator	4-7		
	4.5.4	Natural Gas-Fired Supercritical Boiler Steam			
		Turbine-Generator	4-7		
	4.5.5	Natural Gas-Fired Simple-Cycle Gas Turbine	4-8		
	4.5.6	Kalina Combined-Cycle	4-8		
	4.5.7	Advanced Gas Turbine	4-8		
	4.5.8	Fuel Cells	4-9		
	4.5.9	Coal or Other Solid Fuel-Fired Conventional Furnace/Boiler			
		Steam Turbine-Generator	4-9		
	4.5.10	Atmospheric and Pressurized Fluidized Bed Combustion	4-9		
	4.5.11	Integrated Gasification Combined-Cycle	4-10		
	4.5.12	Nuclear Fission	4-10		
	4.5.13		4-11		
	4.5.14	Geothermal	4-11		
	4.5.15	Solar/Photovoltaics	4-11		
	4.5.16	Wind Generation	4-12		
	4.5.17	Biomass	4-12		
4.6	ALTER	RNATIVE SITE LOCATIONS	4-12		
4.7	CONSIDERATION OF ALTERNATIVE ESGS				
	CONFIGURATIONS AND TECHNOLOGIES				
	4.7.1	Plant Configurations/Arrangements	4-13		
	4.7.2	Replacement of the Existing Boilers	4-14		
	4.7.3	Other Base Load Combined-Cycle Capacity	4-14		
	4.7.4	Alternative Wastewater Disposal Options	4-15		
		4.7.4.1 Alternatives Description	4-16		
		4.7.4.2 Recommended Option	4-19		
	4.7.5	Alternative Cooling Technologies	4-21		
		4.7.5.1 Once-Through Cooling System	4-21		

Sectio	<u>n</u>				Page
			4.7.5.2 4.7.5.3 4.7.5.4 4.7.5.5	Wet Cooling Tower Alternative Air-Cooled Condenser System Performance and Efficiency of Cooling Systems The Environmental Impacts of the Cooling	4-22 4-24 4-26
			1.7.5.5	Systems Systems	4-27
		4.7.6	Alternativ	re Air Emission Control Technology	4-27
			4.7.6.1 4.7.6.2	Definition of Issues and Selection Criteria Alternative NO _x Control Systems	4-27 4-28
	4.8 4.9		ARATIVE A LUSIONS	ANALYSIS OF ALTERNATIVES	4-31 4-31
5.0	ENVI	RONME	NTAL INFO	ORMATION	5.0-1
	5.1 5.2	INTRODUCTION AIR QUALITY			
		5.2.1	Summary	of Air Quality Impacts	5.2-1
			5.2.1.1 5.2.1.2 5.2.1.3	What is the Existing Air Quality in the Area? How Much Will the New Turbines Operate? What Are the Air Pollutant Emissions from the New Project, and How do They Compare with	5.2-3 5.2-4
			5.2.1.4	The Emissions from the Existing Power Plant? Is the New Project Using the Best Control	5.2-4
			5.2.1.5	Technology Available to Control Its Emissions? How Will the New Project Offset Any Increase	5.2-6
			5.2.1.6	in Emissions Over Existing Levels? Once the Project is in Operation, What will be	5.2-6
			5.2.1.7	the Effect on Air Quality in the Area? Will the New Project Emit Toxic Pollutants in Quantities That Could be Harmful to The Health of the Most Sensitive Members of the Community?	5.2-6 5.2-8
		5.2.2	Affected I	Environment	5.2-9
			5.2.2.1 5.2.2.2	Geography and Topography Climate and Meteorology	5.2-9 5.2-10

Section				Page	
		5.2.2.3	Existing Air Quality and Overview of		
			Standards and Health Effects	5.2-11	
		5.2.2.4	Criteria Pollutants and Air Quality Trends	5.2-13	
	5.2.3	Laws, O	rdinances, Regulations, and Standards (LORS)	5.2-20	
		5.2.3.1	Federal LORS	5.2-20	
		5.2.3.2	State LORS	5.2-23	
		5.2.3.3	Local LORS	5.2-26	
		5.2.3.4	Involved Agencies and Agency Contacts	5.2-35	
		5.2.3.5	Permits Required	5.2-36	
	5.2.4	Environ	mental Consequences	5.2-36	
		5.2.4.1	Construction and Demolition Phase Impacts	5.2-44	
		5.2.4.2	Operational Impacts	5.2-44	
		5.2.4.3	Abandonment/Closure	5.2-79	
		5.2.4.4	Cumulative Impacts	5.2-79	
	5.2.5	Mitigatio	on Measures	5.2-79	
	5.2.6	Stipulate	ed Conditions	5.2-80	
	5.2.7	Reference	References		
5.3	GEOL	OGICAL H	OGICAL HAZARDS AND RESOURCES		
	5.3.1 Affected Environment				
		5.3.1.1	Power Plant Site	5.3-1	
		5.3.1.2	Ancillary Pipelines	5.3-30	
	5.3.2	Environ	mental Consequences	5.3-31	
		5.3.2.1	Sand and Gravel Aggregate Resources	5.3-31	
		5.3.2.2	Oil and Gas Resources	5.3-32	
		5.3.2.3	Mineral Resource	5.3-32	
		5.3.2.4	Consequences to Natural Resources	5.3-32	
		5.3.2.5	Cumulative Impacts	5.3.32	
	5.3.3	Stipulate	ed Conditions	5.3-32	
	5.3.4	Other M		5.3-34	
		5.3.4.1	Surface Faulting Rupture	5.3-34	

Section				Page
		5.3.4.2	Earthquake Ground Shaking	5.3-35
		5.3.4.3	Flooding	5.3-35
		5.3.4.4	Tsunamis	5.3-35
		5.3.4.5	Slope Stability	5.3-35
		5.3.4.6	Liquefaction	5.3-36
		5.3.4.7	Shoreline Erosion	5.3-36
	5.3.5	Applicab	ole Laws, Ordinances, Regulations, and Standards	5.3-36
		5.3.5.1	Federal	5.3-37
		5.3.5.2	State	5.3-37
		5.3.5.3	Local	5.3-37
		5.3.5.4	Agencies and Agency Contacts	5.3-37
		5.3.5.5	Applicable Permits	5.3-38
	5.3.5	Referenc	ees	5.3-38
5.4	AGRICULTURE AND SOILS			
	5.4.1	Affected	Environment	5.4-1
		5.4.1.1	Soils Resource	5.4-1
		5.4.1.2	Agriculture and Prime Farmland	5.4-4
	5.4.2	Environn	mental Consequences	5.4-4
		5.4.2.1	Construction Related Impacts	5.4-4
		5.4.2.2	Power Plant Site	5.4-5
		5.4.2.3	Offsite Pipelines	5.4-6
		5.4.2.4	Cumulative Impacts	5.4-8
	5.4.3	Stipulate	d Conditions	5.4-8
	5.4.4	Mitigatio	on Measures	5.4-8
		5.4.4.1	Temporary Erosion Control Measures	5.4-8
		5.4.4.2	Permanent Erosion Control Measures	5.4-9
	5.4.5	Applicab	ole Laws, Ordinances, Regulations, and Standards	5.4-9
		5.4.5.1	Federal	5.4-9
		5.4.5.2	State	5.4-12
		5.4.5.3	Local	5.4-13

Section				Page
		5.4.5.4 5.4.5.5	Agencies and Agency Contacts Applicable Permits	5.4-13 5.4-15
	5.4.6	Reference	es	5.4-15
5.:	5 WATE	R RESOUF	RCES	5.5-1
	5.5.1	Affected	Environment	5.5-4
		5.5.1.1	Power Plant	5.5-4
	5.5.2	Environn	nental Consequences	5.5-30
		5.5.2.1	Power Plant	5.5-31
		5.5.2.2	Offsite Pipelines	5.5-43
		5.5.2.4	Ammonia Line	5.5-43
	5.5.3	Stipulated	d Conditions	5.5-44
	5.5.4	Mitigatio	n Measures	5.5-44
	5.5.5	Applicable Laws, Ordinances, Regulations, and Standards		5.5-45
		5.5.5.1	Federal Authorities and Administering Agencies	5.5-47
		5.5.5.2	State Authorities and Administering Agencies	5.5-48
		5.5.5.3 5.5.5.4	Local Authorities and Administering Agencies Regulatory Programs Related to Water	5.5-49
			Resources	5.5-50
		5.5.5.5	Agency Contacts	5.5-56
		5.5.5.6	Applicable Permits	5.5-56
	5.5.6	Reference	es	5.5-58
5.0	6 BIOLO	BIOLOGICAL RESOURCES		
	5.6.1	Affected	Environment	5.6-1
		5.6.1.1	Survey Methods	5.6-2
		5.6.1.2	Terrestrial Plant Community Setting	5.6-11
		5.6.1.3	Terrestrial Wildlife Setting	5.6-12
		5.6.1.4	Marine Setting	5.6-13
		5.6.1.5	Special-Status Species Occurrence	5.6-18
		5.6.1.6	Economically Important Species Occurrence	5.6-23

Section				Page		
		5.6.1.7	Special Environmental Areas in the Project Vicinity	5.6-28		
	5.6.2	Environn	nental Consequences	5.6-28		
		5.6.2.1	El Segundo Plant Site	5.6-29		
		5.6.2.2	Pipelines	5.6-56		
		5.6.2.3	Parking and Laydown Sites	5.6-57		
		5.6.2.4	Cumulative Impacts	5.6-57		
	5.6.3	Stipulated	d Conditions	5.6-58		
	5.6.3	-	n Measures	5.6-62		
	5.6.5		le Laws, Orders, Regulations and Standards	5.6-66		
		5.6.5.1	Federal Authorities and Administering			
			Agencies	5.6-67		
		5.6.5.2	State Authorities and Administering Agencies	5.6-69		
		5.6.5.3	Local Authorities and Administering Agencies	5.6-70		
		5.6.5.4	Industry Codes and Standards	5.6-71		
		5.6.5.5	Agencies and Agency Contacts	5.6-71		
		5.6.5.6	Applicable Permits	5.6-71		
	5.6.6	Reference	es	5.6-72		
5.7	CULT	URAL RES	RAL RESOURCES			
	5.7.1	Affected	Environment	5.7-2		
		5.7.1.1	Study Area	5.7-2		
		5.7.1.2	Site Description	5.7-4		
		5.7.1.3	Natural History	5.7-11		
		5.7.1.4	Soils and Geology	5.7-11		
		5.7.1.5	Disturbance within the Study Area	5.7-11		
		5.7.1.6	Prehistory	5.7-12		
		5.7.1.7	Ethnohistoric Period	5.7-17		
		5.7.1.8	Historic Setting	5.7-19		
		5.7.1.9	Native American Consultation	5.7-22		
		5.7.1.10	Key Personnel Qualifications	5.7-24		
		5.7.1.11	Records Searches	5.7-24		
		5.7.1.12	Survey Results	5.7-32		
	5.7.2	Environn	nental Consequences	5.7-44		

Section				<u>Page</u>		
		5.7.2.1	Power Plant Site	5.7-48		
		5.7.2.2	Pipeline Routes	5.7-48		
		5.7.2.3	Areas	5.7-48		
		5.7.2.4	Direct, Indirect and Cumulative Impacts	5.7-49		
	5.7.3	Stipulate	ed Conditions	5.7-51		
	5.7.4	Mitigatio	on Measures	5.7-60		
		5.7.4.1	Specific Mitigation Measures	5.7-60		
		5.7.4.2	Significant Unavoidable Adverse Impacts	5.7-67		
	5.7.5	LORS C	ompliance	5.7-67		
		5.7.5.1	Federal	5.7-67		
		5.7.5.2	State	5.7-69		
		5.7.5.3	Local	5.7-70		
		5.7.5.4	Industry Codes and Standards	5.7-72		
		5.7.5.5	Agencies and Agency Contacts	5.7-72		
		5.7.5.6	Applicable Permits	5.7-72		
	5.7.6	Reference	ces Cited	5.7-72		
5.8	PALE	PALEONTOLOGICAL RESOURCES				
	5.8.1	Affected	Environment	5.8-2		
		5.8.1.1	Overview	5.8-2		
		5.8.1.2	Paleontological Literature and Locality			
			Records Review	5.8-3		
		5.8.1.3	Methods of Assessing Sensitivity	5.8-4		
		5.8.1.4	Findings	5.8-8		
	5.8.2	Environ	mental Consequences	5.8-15		
		5.8.2.1	Pipeline Routes	5.8-15		
		5.8.2.2	Areas	5.8-16		
		5.8.2.3	Indirect Cumulative Impacts	5.8-17		
		5.8.2.4	Cumulative Impacts	5.8-17		
	5.8.3	Stipulate	ed Conditions	5.8-18		

Section				Page
	5.8.4	Mitigatio	on Measures	5.8-23
	5.8.5	Applicab	le Laws, Ordinances, Regulations, and Standards	5.8-23
		5.8.5.1	Federal Authorities and Administering Agencies	5.8-23
		5.8.5.2	State Authorities and Administering Agencies	5.8-25
		5.8.5.3	Local Authorities and Administering Agencies	5.8-25
		5.8.5.4	Industry Codes and Standards	5.8-26
		5.8.5.5	Agencies and Agency Contacts	5.8-27
		5.8.5.6	Applicable Permits	5.8-27
	5.8.6	Referenc	ees	5.8-28
5.9	LAND	USE		5.9-1
	5.9.1	Affected	Environment	5.9-2
		5.9.1.1	Plant Site	5.9-2
		5.9.1.2	Water Supply Lines (Route 1)	5.9-5
		5.9.1.3	Sanitary Sewer Line (Route 2)	5.9-6
		5.9.1.4	Aqueous Ammonia Line (Route 3)	5.9-6
		5.9.1.5	Worker Parking and Equipment Laydown	
			Locations	5.9-7
		5.9.1.6	Zoning Trends	5.9-7
	5.9.2	Environn	mental Consequences	5.9-7
		5.9.2.1	Plant Facility	5.9-22
		5.9.2.2	Pipelines	5.9-23
		5.9.2.4	Cumulative Impacts	5.9-26
	5.9.3		ed Conditions	5.9-27
	5.9.4	_	on Measures	5.9-28
	5.9.5	Applicab	ble Laws, Ordinances, Regulations & Standards	5.9-28
		5.9.5.1	Federal	5.9-28
		5.9.5.2	State	5.9-36
		5.9.5.3	Local	5.9-36
		5.9.5.4	Involved Agencies and Agency Contacts	5.9-44
		5.9.5.5	Permits Required and Permit Schedule	5.9-44
		5.9.5.6	Regulatory Compliance	5.9-47
	5.9.7	Referenc	es	5.9-48

Section				Page
5.10	SOCIO	ECONOMI	CS	5.10-1
	5.10.1	Affected	Environment	5.10-1
		5.10.1.1	Study Area	5.10-1
		5.10.1.2	Population	5.10-2
		5.10.1.3	Employment and Economy	5.10-3
		5.10.1.4	Housing	5.10-4
		5.10.1.5	Schools	5.10-5
		5.10.1.6	Utilities	5.10-6
		5.10.1.7	Emergency and Other Services	5.10-6
		5.10.1.8	Local Government Finance	5.10-7
		5.10.1.9	Environmental Justice	5.10-7
	5.10.2	Impacts (or Environmental Consequences)	5.10-16
		5.10.2.1	Plant Demolition, Construction, and Operation	5.10-16
		5.10.2.2	Population	5.10-20
		5.10.2.3	Economy/Local Government Finance	5.10-21
		5.10.2.4	Housing	5.10-22
		5.10.2.5	Public Utilities and Emergency Services	5.10-22
		5.10.2.6	Schools	5.10-23
		5.10.2.7	Abandonment/Closure	5.10-23
		5.10.2.8	Environmental Justice	5.10-23
		5.10.2.9	Cumulative Impacts	5.10-24
	5.10.3	Stipulated	l Conditions	5.10-24
	5.10.4	Mitigation	n Measures	5.10-25
	5.10.5	Applicabl	e Laws, Ordinances, Regulations, and Standards	5.10-25
		5.10.5.1	Federal	5.10-25
		5.10.5.2	State	5.10-25
		5.10.5.3	Local	5.10-26
		5.10.5.4	Agencies and Agency Contacts	5.10-27
		5.10.5.5	Applicable Permits	5.10-27
	5.10.6	Reference	es	5.10-28
5.11	TRAFF	FIC AND TI	RANSPORTATION	5.11-1
	5.11.1	Affected	Environment	5.11-1

Section				<u>Page</u>
		5.11.1.1 5.11.1.2 5.11.1.3	Freeways and Roadways Level of Service Other Transportation Facilities	5.11-2 5.11-3 5.11-6
	5.11.2	Environm	nental Consequences	5.11-10
		5.11.2.1 5.11.2.2 5.11.2.3	Construction-Related Impacts Operations-Related Impacts Cumulative Impacts	5.11-10 5.11-15 5.11-16
	5.11.3 5.11.4 5.11.5	Mitigation	d Conditions n Measures le Laws, Ordinances and Regulations lards	5.11-16 5.11-18 5.11-18
		5.11.5.1 5.11.5.2 5.11.5.3 5.11.5.4 5.11.5.5	Federal State Local Agencies and Agency Contacts Permits Required and Permitting Schedule	5.11-23 5.11-23 5.11-24 5.11-27
	5.11.6	Reference	es	5.11-28
5.12	NOISE			5.12-1
	5.12.1	Affected	Environment	5.12-1
		5.12.1.2	Recommended A-Weighted Sound	5.12-2 5.12-3
		5.12.1.4	Level Design Goals Noise Prediction Modeling of Operational Noise	5.12-11 5.12-14
	5.12.2	Environm	nental Consequences	5.12-15
		5.12.2.1 5.12.2.2 5.12.2.3 5.12.2.4 5.12.2.5	Power Plant Site Transmission Line Route Offsite Pipelines Access Road Cumulative Impacts	5.12-15 5.12-18 5.12-19 5.12-21 5.12-21

Section				Page
	5.12.3 Stipulated Conditions 5.12.4 Mitigation Measures 5.12.4.1 Power Plant Site 5.12.4.2 Transmission Line Routes 5.12.4.3 Offsite Pipelines 5.12.4.4 Access Road 5.12.4.5 Cumulative Noise Impacts 5.12.5 Applicable Laws, Ordinances and Regulations (LORS) Compliance 5.12.5.1 Federal 5.12.5.2 State of California 5.12.5.3 Local Noise Regulations 5.12.5.4 Agency Contacts 5.12.5.5 Applicable Permits 5.12.6 References 5.13 VISUAL RESOURCES 5.13.1 Affected Environment 5.13.1.1 Regional Setting 5.13.1.2 Project Site 5.13.1.3 Continued Use of Existing Natural Gas Pipeline 5.13.1.4 Water Pipeline Corridors 5.13.2 Applicable Laws, Ordinances, Regulations and Standards 5.13.2.1 Los Angeles County LORS Compliance 5.13.2.2 City of El Segundo LORS Compliance 5.13.3 Agencies and Agency Contacts 5.13.4 Permits Required and Permit Schedule 5.13.5 Environmental Consequences	5.12-21 5.12-25		
	3.12.4	Wingano.	Mitigation Measures 5.12.4.1 Power Plant Site 5.12.4.2 Transmission Line Routes 5.12.4.3 Offsite Pipelines 5.12.4.4 Access Road 5.12.4.5 Cumulative Noise Impacts Applicable Laws, Ordinances and Regulations (LORS) Compliance 5.12.5.1 Federal 5.12.5.2 State of California 5.12.5.3 Local Noise Regulations 5.12.5.4 Agency Contacts 5.12.5.5 Applicable Permits References RESOURCES Affected Environment 5.13.1.1 Regional Setting 5.13.1.2 Project Site 5.13.1.3 Continued Use of Existing Natural Gas Pipeline 5.13.1.4 Water Pipeline Corridors Applicable Laws, Ordinances, Regulations and Standards 5.13.2.1 Los Angeles County LORS Compliance 5.13.2.2 City of El Segundo LORS Compliance 5.13.2.3 City of Manhattan Beach LORS Compliance Agencies and Agency Contacts Permits Required and Permit Schedule	3.12-23
		5.12.4.1	Power Plant Site	5.12-25
		5.12.4.2	Transmission Line Routes	5.12-26
		5.12.4.3	Offsite Pipelines	5.12-26
				5.12-26
		5.12.4.5	Cumulative Noise Impacts	5.12-28
	5.12.5	Applicabl	le Laws, Ordinances and Regulations	
		(LORS) (Compliance	5.12-28
		5.12.5.1	Federal	5.12-28
		5.12.5.2	State of California	5.12-32
		5.12.5.3	Local Noise Regulations	5.12-32
			e e e e e e e e e e e e e e e e e e e	5.12-35
		5.12.5.5	Applicable Permits	5.12-35
	5.12.6	Reference	es	5.12-35
5.13	VISUAL RESOURCES			
	5.13.1	Affected	Environment	5.13-1
		5.13.1.1	Regional Setting	5.13-1
				5.13-2
			· ·	
			<u>e</u>	5.13-4
		5.13.1.4	•	5.13-4
	5.13.2	Applicabl	le Laws, Ordinances, Regulations and Standards	5.13-5
		5.13.2.1	Los Angeles County LORS Compliance	5.13-9
		5.13.2.2	City of El Segundo LORS Compliance	5.13-10
		5.13.2.3	City of Manhattan Beach LORS Compliance	5.13-11
	5.13.3	Agencies	and Agency Contacts	5.13-11
	5.13.4	Permits R	Lequired and Permit Schedule	5.13-12
	5.13.5	Environm	nental Consequences	5.12-12
		5.13.5.1	Analysis Methodology	5.13-12

<u>Section</u>				Page
		5.13.5.2	Site Preparation and Construction Impacts	5.13-19
		5.13.5.3	Project Site Features	5.13-19
		5.13.5.4	Assessment of Visual Effects	5.13-21
		5.13.5.5	Visible Plumes	5.13-27
		5.13.5.6	Abandonment/Closure	5.13-31
		5.13.5.7	Cumulative Impacts	5.13-31
	5.13.6	-	d Conditions	5.13-31
	5.13.7	C		5.13-35
	5.13.8	Reference	es	5.13-35
5.14	WASTI	E MANAG	EMENT	5.14-1
	5.14.1	Affected	Environment	5.14-1
		5.14.1.1	Plant Site	5.14-1
		5.14.1.2	Offsite Structures	5.14-2
		5.14.1.3	Non-Hazardous Solid Waste Disposal	5.14-3
		5.14.1.4	Hazardous Solid Waste Disposal	5.14-4
		5.14.1.5	Facility Effluent Disposal	5.14-4
		5.14.1.6	Hazardous and Non-Hazardous Wastewater	
			(Non-effluent Waste Streams)	5.14-4
	5.14.2	Environm	nental Consequences	5.14-7
		5.14.2.1	Construction	5.14-7
		5.14.2.2	Operations and Maintenance	5.14-20
		5.14.2.3	Abandonment/Closure	5.14-24
		5.14.2.4	Cumulative Impacts	5.14-24
	5.14.3	Stipulated	d Conditions	5.14-25
	5.14.4	Mitigation	n Measures	5.14-26
		5.14.4.1	Demolition and New Construction	5.14-26
		5.14.4.2	Operations and Maintenance Phase Mitigations	5.14-28
		5.14.4.3	Monitoring Program	5.14-29
	5.14.5	Applicabl	le Laws, Ordinance, Regulations, and Standards	5.14-29
		5.14.5.1	Federal	5.14-30
		5.14.5.2	State	5.14-31
		5.14.5.3	Local	5.14-32

Section					Page
			5.14.5.4 5.14.5.5	Agency Contacts Applicable Permits	5.14-32 5.14-33
		5.14.6	Reference	es	5.14-33
5	5.15	HAZAF	RDOUS MA	ATERIALS HANDLING	5.15-1
		5.15.1		Environment	5.15-1
		5.15.2	Environm	ental Consequences	5.15-2
			5.15.2.1	Site Preparation	5.15-2
			5.15.2.2	Construction Phase	5.15-4
			5.15.2.2	Operations Phase	5.15-10
			5.15.2.3	Offsite Consequences Analysis	5.15-13
			5.15.2.4	Cumulative Impacts	5.15-18
		5.15.3	Stipulated	l Conditions of Certification	5.15-18
		5.15.4	-	n Measures	5.15-19
		5.15.5	_	e laws, Ordinances, Regulations, and Standards	5.15-20
			5.15.5.1	Federal	5.15-20
			5.15.5.2	State	5.15-22
			5.15.5.3	Local	5.15-23
			5.15.5.4	Industry Standards	5.15-24
			5.15.5.5	Agencies and Agency Contacts	5.15-24
			5.15.5.6	Permits Required and Permit Schedule	5.15-25
		5.15.6	Reference	es	5.15-25
5	5.16	PUBLIC	C HEALTH	[5.16-1
		5.16.1	Affected 1	Environment	5.16-1
		5.16.2	Environm	ental Consequences	5-16-2
			5.16.2.1	Public Health Risks - Construction Phase	5.16-2
			5.16.2.2	Public Health Risks - Operational Impacts	5.16-2
			5.16.2.3	Study Results	5.16-10
			5.16.2.4	Uncertainties in the Analysis	5.16-11
			5.16.2.5	Criteria Pollutants	5.16-13
			5.16.2.6	Public Health Risks – Chemicals	
				Stored and Used On Site	5.16-13

Section				Page
		5.16.2.7 5.16.2.8	Summary of Public Health Risk Impacts Electromagnetic Field Exposure	5.16-14 5.16-14
		5.16.2.9	Cumulative Impacts	5.16-15
	5.16.3	-	l Conditions	5.16-16
	5.16.4 5.16.5	_	n Measures le Laws, Ordinances, Regulations and Standards	5.16-16 5.16-16
		5.16.5.1	Federal	5.16-18
		5.16.5.2	State	5.16-19
		5.16.5.3	Local	5.16-21
		5.16.5.4	Applicable Permits	5.16-21
		5.16.5.5	Agencies and Agency Contacts	5.16-22
	5.16.6	Reference	es	5.16-22
5.17	WORK	ER SAFET	Y	5.17-1
	5.17.1	Affected	Environment	5.17-1
	5.17.2	Environm	nental Consequences	5.17-2
		5.17.2.1	Facility Impacts	5.17-2
	5.17.3	Stipulated	1 Condititons	5.17-15
	5.17.4	_	n Measures	5.17-17
	5.17.5	Applicabl	e Laws, Ordinances, Regulations, and Standards	5.17-17
		5.17.5.1	Federal	5.17-17
		5.17.5.2	State	5.17-19
		5.17.5.3	Local	5.17-19
		5.17.5.4	Agencies and Agency Contacts	5.17-19
		5.17.5.5	Applicable Permits	5.17-21
	5.17.5	Reference	es	5.17-22
5.18	Transm	ission Line	Safety and Nuisance	5.18-1
	5.18.1	Affected 1	Environment	5.18-1
	5.18.2	Electric a	nd Magnetic Field Issues	5.18-2
		5.18.2.1	Electric Fields	5.18-2
		5.18.2.2	Magnetic Fields	5.18-15

5.18.2.4 Computer Interference 5. 5.18.2.5 Human Health Studies 5. 5.18.2.6 Electric and Magnetic Field Standards 5. 5.18.2.8 Fuel Ignition 5. 5.18.2.8 Fuel Ignition 5. 5.18.2.9 Audible Noise 5. 5.18.2.11 Radio and TV Interference 5. 5.18.3 Stipulation to Standard Conditions 5. 5.18.4 Mitigation 5. 5.18.5 LORS Compliance 5. 5.18.5.5 Agencies and Agency Contacts 5. 5.18.5.6 Permits 5. 5.6 References 5 5.19.1 Facility Availability 5. 5.19.1.1 Range of Availability 5. 5.19.1.2 Basis for Forecasts of Availability 5. 5.19.1.3 Degradation in Output from Fouling And Wear 5. 5.19.1.4 Summary of Abailability 5. 5.19.3 Equipment Redundancy 5. 5.19.3.1 Combined-Cycle Power Block 5. 5.19.3.2 Balance-of-Plant Systems	Page			
		5.18.2.3	Pacemakers	5.18-28
		5.18.2.4		5.18-29
		5.18.2.5	Human Health Studies	5.18-30
		5.18.2.6	Electric and Magnetic Field Standards	5.18-33
			Induced Currents	5.18-35
		5.18.2.8		5.18-38
		5.18.2.9	Corona Effects	5.18-39
				5.18-39
		5.18.2.11	Radio and TV Interference	5.18-44
	5.18.3	Stipulatio	n to Standard Conditions	5.18-48
	5.18.4			5.18-50
	5.18.5	LORS Co	mpliance	5.18-50
		5.18.5.5	Agencies and Agency Contacts	5.18-53
		5.18.5.6	Permits	5.18-53
	5.6	Reference	es	5.18.53
5.19	Reliability and Efficiency			5.19-1
	5.19.1	Facility Availability		5.19-1
		5.19.1.1	Range of Availability	5.19-1
			· · · · · · · · · · · · · · · · · · ·	5.19-1
		5.17.1.5		5.19-2
		5 19 1 1		5.19-3
		3.17.1.4	Summary of Abanabinty	3.17-3
	5.19.2	Annual ar	nd Lifetime Capacity Factors	5.19-3
	5.19.3	Equipmen	nt Redundancy	5.19-3
		5.19.3.1	Combined-Cycle Power Block	5.19-3
		5.19.3.2		5.19-4
		5.19.3.3	Distributed Control and Information System	5.19-5
	5.19.4	Fuel Avai	lability	5.19-6
		5.19.4.1	Gas Supply	5.19-6
	5.19.5	Water Av	ailability	5.19-8
	5.19.6	Project Q	uality Assurance and Control	5.19-8

Section				<u>Page</u>
		5.19.6.1 5.19.6.2 5.19.6.3	Quality Assurance Quality Control Records Operations and Maintenance Plan	5.19-9 5.19-10 5.19-11
	5.19.7	Power Pla	nt Performance and Efficiency	5.19-13
		5.19.7.1	Performance and Efficiency Overview	5.19-14
	5.19.8	Reference	s	5.19-16
5.20	CUMU	LATIVE IM	MPACTS	5.20-1
	5.20.1 5.20.2	Introducti Cumulativ	on ve Impacts Analysis	5.20-1 5.20-2
		5.20.2.1	Los Angeles International Airport Draft Master Plan	5.20-6
		5.20.2.2 5.20.2.2	Continental City Project Los Angeles International Airport	5.20-6
		5.20.2.4 5.20.2.5	Northside Project Offices on 2301 Rosecrans Avenue, EA#206411 EA# 530, City of El Segundo	5.20-7 5.20-7 5.20-8
		5.20.2.6 5.20.2.7	Hotel/Office, City of El Segundo Widening of Aviation Boulevard	5.20-8 5.20-8
		5.20.2.8 5.20.2.9	Remax Office Building Former Data General Building Project	5.20-8 5.20-9
		5.20.2.10 5.20.2.11	Expo Design Center (Home Depot) Playa Vista Development	5.20-9 5.20-9
		5.20.2.12	Hawthorne Gateway Redevelopment Project - Environmental Impact Report	5.20-10
		5.20.2.13 5.20.2.14	Mar Ventures Residential	5.20-11 5.20-11
			Hawthorne Airport Hawthorne Ocean Gate Redevelopment Project	5.20-11 5.20-12
		5.20.2.17	Other Proposed Power Plants Conclusion	5.20-12 5.20-13
	5.20.3		Conditions of Certification	5.20-14
	5.20.4 5.20.5	_	n Measures e Laws Ordinances Regulations and Standards	5.20-14 5.20-14
	1 / 11 7	- A DDHCa b le	E LAWS ORGINANCES REPHIADORS AND SIANDARDS) /U-14

Section	<u>on</u>			Page
		5.20.5.1 5.20.5.5	Agencies and Agency Contacts Applicable Permits	5.20-14 5.20-15
	5.20.4	Reference	es	5.20-15
6.0	FINANCIAL I	NFORMAT	ΓΙΟΝ	6.0-1

Table		Page
Table 1-1	Environmental Benefits of ESPR	1-7
Table 3.4-1	Daily Water Supply Requirement	3.4-9
Table 3.4-2	Annual Water Use	3.4-10
Table 3.4-3	Expected Water Supply Quality	3.4-10
Table 3.4-4	Expected Process Waste Characterization	3.4-13
Table 3.4-5	Estimated Liquid Process Wastewater Volumes to Discharge	3.4-14
Table 3.4-6	Summary of Construction and Start-up Waste Streams and	
	Management Methods	3.4-15
Table 3.4-7	Operating Waste Streams and Management Methods	3.4-17
Table 3.4-8	Anticipated Chemical Usage and Storage	3.4-18
Table 3.8-1	Demolition Staffing Schedule	3.8-4
Table 3.8-2	Demolition Equipment Usage	3.8-6
Table 3.8-3	Schedule of Truck Deliveries/Demolition Materials	3.8-7
Table 3.8-4	Heavy Equipment Delivery Schedule	3.8-7
Table 3.9-1	Construction Staffing Schedule	3.9-2
Table 3.9-2	Construction Equipment Usage	3.9-6
Table 3.9-3	Construction Schedule for Truck Deliveries of Equipment	3.9-10
Table 3.9-4	Heavy Equipment Truck Delivery Schedule	3.9-11
Table 3.9-5	Estimated Land Disturbance	3.9-15
Table 3.12-1	LORS Related to Facility Design	3.12-1
Table 4.7-1	Summary of Plant Wastewater Streams	4-15
Table 4.7-2	Capital Cost Estimate for Wastewater Disposal Plans	4-20
Table 4.7-3	Estimate of Operation and Maintenance Costs for	
	Wastewater Disposal Plans	4-20
Table 4.7-4	Heat Balance Summary of Cooling System Alternatives	4-26
Table 4.7-5	SCR Costs (per gas turbine/HRSG)	4-32
Table 4.7-6	Oxidation Catalyst Costs (per gas turbine/HRSG)	4-33
Table 4.7-7	SCONO _x Cost and Cost/Effectivness (per gas turbine/HRSG)	4-34
Table 4.7-8	SCONO _x Ammonia Cost Effectivness (per gas turbine/HRSG)	4-35
Table 5.2-1	Maximum Background Concentrations, 1997-1999 (μg/m ³)	5.2-4
Table 5.2-2	Emissions from New Gas Turbines	5.2-5
Table 5.2-3	Emissions from Existing Boilers	5.2-5
Table 5.2-4	Comparison of Emissions from New Turbines and Existing	
	Boilers 1&2	5.2-5
Table 5.2-5	Summary of Modeling Results	5.2-7
Table 5.2-6	Modeled Maximum Project Impacts	5.2-8
Table 5.2-7	Health Risk Assessment Results	5.2-9
Table 5.2-8	Ambient Air Quality Standards	5.2-12
Table 5.2-9	Ozone Levels in West Los Angeles Veterans Hospital	
	Monitoring Station, 1990-1999 (ppm)	5.2-14
Table 5.2-10	Nitrogen Dioxide Levels in West Los Angeles Veterans	
	Hospital Monitoring Station, 1990-1999 (ppm)	5.2-15

Table		Page
Table 5.2-11	Carbon Monoxide Levels in West Los Angeles Veterans	
	Hospital Monitoring Station, 1990-1999 (ppm)	5.2-15
Table 5.2-12	Sulfur Dioxide Levels in Hawthorne, 1990-1999 (ppm)	5.2-16
Table 5.2-13	Particulate Sulfate Levels in Hawthorne, 1990-1999 (µg/m ³)	5.2-17
Table 5.2-14	PM_{10} Levels in Hawthorne, 1990-1999 (µg/m ³)	5.2-18
Table 5.2-15	PM _{2.5} Levels in North Long Beach, 1990-1999 (μg/m ³)	5.2-19
Table 5.2-16	Airborne Lead Levels in Hawthorne, 1990-1999 (µg/m ³)	5.2-19
Table 5.2-17	Criteria Pollutant Precursors	5.2-28
Table 5.2-18	Preconstruction Review Elements for Criteria Pollutants	5.2-29
Table 5.2-19	SCAQMD Significance Thresholds for Ambient Nonattainment	
	Pollutant Concentrations	5.2-30
Table 5.2-20	PSD Class II Increments	5.2-30
Table 5.2-21	Health Risk Thresholds	5.2-31
Table 5.2-22	Air Quality Agencies	5.2-36
Table 5.2-23	LORS and Permits for Protection of Air Quality	5.2-37
Table 5.2-24	Baseline Emissions from Units 1-4 for CEQA Purposes	
	El Segundo Generation Station (tpy)	5.2-45
Table 5.2-25	Future Emissions for Units 3 and 4 El Segundo	
	Generating Station	5.2-46
Table 5.2-26	Typical Natural Gas Analysis, ESPR Project	5.2-46
Table 5.2-27	Emissions from Combustion Turbines without Duct Burners	
	(41°F and 76% Relative Humidity)	5.2-47
Table 5.2-28	Emissions from Combustion Gas Turbines with Duct Burners	
	(83°F and 47% Relative Humidity)	5.2-47
Table 5.2-29	Expected Facility Startup and Shutdown Emission Rates	
	(per Gas Turbine) ESPR Project	5.2-48
Table 5.2-30	Maximum Combined Cycle Operation Heat Input Rates (HHV)	
	(41°F and 76% Relative Humidity)	5.2-48
Table 5.2-31	Maximum Combined Cycle Operation Heat Input Rates (HHV)	
	(83°F and 47% Relative Humidity)	5.2-49
Table 5.2-32	Emissions from New Equipment (Gas Turbines/HRSGS and Fire	
	Pump Engine)	5.2-50
Table 5.2-33	Total Facility Emissions (tons per year)	5.2-50
Table 5.2-34	Results of Screening Procedure: New Gas Turbines/HRSGS	
	Operating Conditions Producing Maximum Modeled	
	Ambient Impacts, ESPR Project	5.2-56
Table 5.2-35	Emission Rates and Stack Parameters used in Modeling	
	Analysis for Gas Turbine Startup Emission Impacts	5.2-58
Table 5.2-36	Summary of Results from Refined Modeling Analyses,	
	Maximum Impacts (μg/m³)	5.2-59
Table 5.2-37	Maximum Background Concentrations, 1997-1999 (μg/m ³)	5.2-60

Table		Page
Table 5.2-38	Modeled Maximum Project Impacts, ESPR Project	5.2-61
Table 5.2-39	Comparison of Net Emissions Increase with PSD Significant	
	Emissions Levels, ESPR Project (Tons/Year)	5.2-62
Table 5.2-40	Project Impacts in Class I Area, ESPR Project	5.2-63
Table 5.2-41	Maximum Modeled Impacts and NSR/Reclaim Significance	
	Thresholds, ESPR Project (Gas Turbines/HRSGS Only)	5.2-64
Table 5.2-42	Maximum Predicted 24-Hour Average Concentrations from	
	ISCST3	5.2-65
Table 5.2-43	Maximum Impacts on Visibility in Class I Areas	5.2-66
Table 5.2-44	Summary of Offset Requirements, ESPR Project	5.2-71
Table 5.2-45	Credits Under Negotiations With Third Party Broker	5.2-72
Table 5.2-46	Summary of Offsets Generated by Interpollutant Transfers	5.2-74
Table 5.2-47	Credits Under Negotiation or Being Developed	5.2-76
Table 5.2-48	Summary of Total Offsets Required and Available	5.2-76
Table 5.2-49	Comparison of Maximum Modeled Impacts from ISCST3 and	
	PSD Significance Thresholds and Class II Increments	
	ESPR Project (Gas Turbines/HRSGS and Fire Pump Engine)	5.2-78
Table 5.2-50	Comparison of Total Facility Emissions with SCAQMD	
	Significance Levels (LBs/day)	5.2-79
Table 5.3-1	Summary of Fault Parameters	5.3-7
Table 5.3-2	LORS Applicable to Geologic Hazards & Resources	5.3-36
Table 5.3-3	Involved Agency Contacts	5.3-38
Table 5.4-1	LORS Applicable to Soils Resources and Agrigulture	5.4-10
Table 5.4-2	Agency Contacts	5.4-14
Table 5.4-3	Applicable Permits	5.4-15
Table 5.5-1	Existing and Projected Water Usage	5.5-5
Table 5.5-2	Expected Quality of Water Supply Sources	5.5-6
Table 5.5-3	Current and Proposed Cooling System Design Loads and Flows	5.5-8
Table 5.5-4	Average Monthly Rainfall Amounts El Segundo, California	5.5-10
Table 5.5-5	1998 California 303(d) List for Santa Monica Bay, Pollutants/	
	Stressors Exceeding Water Quality Standards Offshore and	
	Nearshore	5.5-12
Table 5.5-6	Summary of Average Annual Discharge Water Quality	5.5-14
Table 5.5-7	Effluent Limitations	5.5-15
Table 5.5-8	Chlorine Effluent Limits	5.5-15
Table 5.5-9	Existing Discharge Conditions	5.5-17
Table 5.5-10	Winter 1999 Receiving Water Temperature Measurements,	
	February 24, 1999	5.5-19
Table 5.5-11	Summer 1999 Receiving Water Temperature Measurements,	
	August 13, 1999	5.5-20
Table 5.5-12	Winter 1999 Receiving Water Temperature Measurements,	
	April 10, 1998	5.5-21

Table		<u>Page</u>
Table 5.5-13	Summer 1998 Receiving Water Temperature Measurements,	
	August, 11, 1998	5.5-22
Table 5.5-14	Winter 1997 Receiving Water Temperature Measurements,	
	April 26, 1997	5.5-23
Table 5.5-15	Summer 1997 Receiving Water Temperature Measurements,	
	July 29, 1997	5.5-24
Table 5.5-16	Discharge Limitations – Treated Chemical Metal	
	Cleaning Wastes	5.5-26
Table 5.5-17	Discharge Limitations – Low Volume Wastes	5.5-26
Table 5.5-18	1999 Low Volume Waste Monitoring Data Summary	5.5-27
Table 5.5-19	Discharge Limitations Treated Sanitary Wastes	5.5-30
Table 5.5-20	Treated Sanitary Wastes Summary of Monthly Monitoring	
	Data Sanitary Plant No. 1	5.5-30
Table 5.5-21	Existing and Proposed Generating Capacities and	
	Cooling Systems Flows	5.5-33
Table 5.5-22	Expected Process Waste Characterization	5.5-37
Table 5.5-23	Estimated Liquid Process Wastewater Volumes to Discharge	5.5-38
Table 5.5-24	Projected Discharge Conditions	5.5-39
Table 5.5-25	Existing and ESPR Discharges	5.5-42
Table 5.5-26	LORS Applicable to Water Resources	5.5-45
Table 5.5-27	Resources Agency Contacts	5.5-57
Table 5.5-28	Applicable Permits	5.5-57
Table 5.6-1	Special-Status Species Potentially Occurring at the ESPR Project	5.6-4
Table 5.6-2	Design Specifications of Intake Conduits for	
	ESGS Units 1 and 2/Units 3 and 4; and Scattergood	5.6-6
Table 5.6-3	Intake and Discharge Temperatures at the Existing	
	ESGS and Scattergood Outfalls (1997-1999)	5.6-8
Table 5.6-4	Fish and Invertebrate Species Known to Occur in the	
	Vicinity of the ESPR	5.6-16
Table 5.6-5	Population Estimates and Related Fishing Industry Impacts	
	for Economically Important Species in the ESPR Project Vicinity	5.6-25
Table 5.6-6	Projected Source Water Volumes Required to Support a	
	5% Ichthyoplankton Entrainment Mortality Rate at Scattergood	5.6-34
Table 5.6-7	Equivalent Adult Fish Losses Associated with an Estimated 5%	
	Ichthyoplankton Entrainment Mortality Rate at Scattergood	5.6-35
Table 5.6-8	Abundance and Biomass of Fish Impingement during Heat	
	Treatment and Normal Operations at ESGS Units 1 and 2	
	Intake Structures (1999)	5.6-37
Table 5.6-9	Abundance and Biomass of Fish Impingement during Heat	
	Treatment and Normal Operations at ESGS Units 3 and 4	
	Intake Structures (1999)	5.6-39

Table		Page
Table 5.6-10	Abundance and Biomass of Fish Impingement during Heat Treatment and Normal Operations at ESGS Units 1 and 2	
Table 5.6-11	Intake Structures (1998) Abundance and Biomass of Fish Impingement during Heat Treatment and Normal Operations at ESGS Units 3 and 4	5.6-41
	Intake Structures (1998)	5.6-42
Table 5.6-12	Abundance and Biomass of Fish and Invertebrate Impingement during Heat Treatment at ESGS Units 1 and 2 and Units 3 and 4	
T 11 5 6 12	Intake Structures (1997)	5.6-45
Table 5.6-13 Table 5.6-14	Impingement Results per Average Number of Fish and Biomass Economically Important Ichthyoplankton Concentrations	5.6-48
	Found in King Harbor	5.6-64
Table 5.6-15	Results of NPDES Benthic Sampling for ESGS (1997-1999)	5.6-65
Table 5.6-16	LORS for Biological Resources	5.6-66
Table 5.6-17	Agency Contacts	5.6-72
Table 5.6-18	Applicable Permits	5.6-73
Table 5.7-1	Project Component/Areas	5.7-2
Table 5.7-2	Study Previous Cultural Resource Studies Within the	
	Project APE or Adjacent Area	5.7-63
Table 5.7-3	Previously Recorded Archaeological Sites within Project APE	5.7-66
Table 5.7-4	Previously Recorded Archaeological Sites within	
	Adjacent Study Areas (Outside Project APE)	5.7-66
Table 5.7-5	Archeological Survey Coverage by Project Component	
	and Field Conditions	5.7-68
Table 5.7-6	Newly Recorded Sites or Isolates within the Project APE	5.7-70
Table 5.7-7	Newly Recorded Sites within Adjacent Study Areas	
	(Outside Project APE)	5.7-70
Table 5.7-8	Identified Historic Built Environment Resources Adjacent to	
	Project Components	5.7-71
Table 5.7-9	Cultural Resources by Project Component: Records	
	Search Results, Survey Results, Impacts and Mitigation	5.7-72
Table 5.7-10	El Segundo NRG-Summary of LORS and Compliance	
	(Cultural Resources)	5.7-77
Table 5.8-1	El Segundo Power Redevelopment Project Geologic Units within Project Area	5.8-5
Table 5.8-2	Paleontological Sensitivity and Geologic Units	5.8-6
Table 5.8-3	Survey Coverage by Project Component and Field Conditions	5.8-9
Table 5.8-4	LORS Applicable to Paleontological Resources	5.8-24
Table 5.8-5	Agency Contacts	5.8-27
Table 5.8-6	Applicable Permits	5.8-27
Table 5.9-1	Sensitive Land Use Receptors within Project Study Area	5.9-5
Table 5.9-1	Zoning Designations within the Project Study Area	5.9-8
1 autc 3.3-2	Lonning Designations within the Hoject Study Area	3.3-0

Table		<u>Page</u>
Table 5.9-3	Description of Potential Parking and Laydown Areas	5.9-9
Table 5.9-4	Discretionary Reviews Performed within the Past 18 Months	
	(Cities of El Segundo and Manhattan Beach)	5.9-10
Table 5.9-5	LORS and Compliance for Land Use	5.9-29
Table 5.9-6	Agency Contacts	5.9-44
Table 5.10-1	Historical and Projected Populations	5.10-2
Table 5.10-2	Los Angeles County Non-Farm Earnings for 1996-1997	5.10-3
Table 5.10-3	Los Angeles Unified School District Enrollment	
	(October 1999)	5.10-5
Table 5.10-4	El Segundo Unified School District Enrollment	
	(October 1999)	5.10-5
Table 5.10-5	General Tax Levy Share within City of El Segundo	5.10-7
Table 5.10-6	Number of People by Race and Poverty Level within a	
	Six-Mile Radius of Plant Site	5.10-9
Table 5.10-7	Project Labor Needs and Available Labor by Craft/Skill	5.10-17
Table 5.10-8	ESPR Construction Staffing Schedule	5.10-18
Table 5.10-9	ESPR Estimated Operating and Maintenance Staff	5.10-21
Table 5.10-10	LORS Applicable to Socioeconomics	5.10-26
Table 5.10-11	Agency Contacts	5.10-27
Table 5.10-12	Applicable Permits	5.10-27
Table 5.11-1	Summary of Existing Intersection LOS	5.11-4
Table 5.11-2	Existing Roadway Information and LOS	5.11-5
Table 5.11-3	Area Bike Routes	5.11-8
Table 5.11-4	Roadways Traveled per Parking Lot Location	5.11-12
Table 5.11-5	Summary of Existing Plus Construction Traffic	
	Intersection LOS	5.11-13
Table 5.11-6	LORS Applicable to Traffic and Transportation	5.11-19
Table 5.11-7	Agency Contacts	5.11-27
Table 5.11-8	Permit Schedule for Traffic and Transportation	5.11-28
Table 5.12-1	Long-Term Noise Measurement Data Summary	5.12-5
Table 5.12-2	Short-Term Noise Measurement Data Summary	
	(7/20-21/00)	5.12-7
Table 5.12-3	Short-Term Noise Measurement Data Summary	
	(8/31-9/1/00)	5.12-9
Table 5.12-4	Short-Term Noise Measurement Data Summary	
	(11/13-11/14/00)	5.12-10
Table 5.12-5	Octave Band Noise Measurements (in dB)	5.12-12
Table 5.12-6	Estimated Sound Pressure Levels (SPL, DBA) for Major	
	Equipment at El Segundo Power Redevelopment Project	5.12-15
Table 5.12-7	Typical Noise Levels from Construction Activities	
	or Industrial Projects	5.1217
Table 5.12-8	Noise Levels from Typical Pipeline Construction Activities	5.12-20

Table		Page
Table 5.12-9	Anticipated Noise Mitigation Measures, Unmitigated and	
Table 5.12-10	Mitigated Sound Pressure Levels at 400-Foot Distance (dBA) Laws, Ordinances and Regulations (LORS) Applicable	5.12-27
	To Noise	5.12-29
Table 5.12-10	LORS Applicable to Noise	5.12-26
Table 5.13-1	LORS Applicable to Visual Resources	5.13-5
Table 5.13-2	Agency Contacts	5.13-12
Table 5.13-3	Applicable Permits	5.13-12
Table 5.13-4	Susceptibility to Impact	5.13-18
Table 5.13-5	Significant Structures and Equipment	5.13-20
Table 5.13-6	Overall Impact Severity	5.13-27
Table 5.13-7	Plume Analysis Summary	5.13-28
Table 5.13-8	HRSG Stack Parameters	5.13-29
Table 5.14-1	Waste Recycling/Disposal Facilities	5.14-5
Table 5.14-2	Asbestos Containing Materials – Unit 1	5.14-10
Table 5.14-3	Asbestos Containing Materials – Unit 2	5.14-14
Table 5.14-4	Summary of Construction Waste Streams and Management	
	Methods	5.14-19
Table 5.14-5	Operating Waste Streams and Management Methods	5.14-21
Table 5.14-6	Process Waste Characterization	5.14-22
Table 5.14-7	Estimated Liquid Process Wastewater Volumes to Discharge	5.14-23
Table 5.14-8	Estimated Liquid Process Wastewater Volumes to Discharge	5.14-29
Table 5.14-9	Agency Contacts	5.14-32
Table 5.14-10	Applicable Permits	5.14-33
Table 5.15-1	Sensitive Receptors within 2-Mile Radius of ESGS	5.15-3
Table 5.15-2	Hazardous Materials and Wastes Usage and Storage	
	During Construction and Operations	5.15-5
Table 5.15-3	LORS Applicable to Hazardous Materials Handling	5.15-21
Table 5.15-4	Agency Contact	5.15-24
Table 5.15-5	Permit Table for Hazardous Materials	5.15-25
Table 5.16-1	Noncriteria Pollutant Emissions from the Gas Turbines	5.16-4
Table 5.16-2	Noncriteria Pollutant Emissions from the Boilers (Future)	5.16-5
Table 5.16-3	Noncriteria Pollutant Emissions for Fire Pump Engine	5.16-6
Table 5.16-4	ESPR Health Risk Assessment, Emissions Used in ACE	
	Modeling	5.16-9
Table 5.16-5	Health Risk Assessment Results	5.16-11
Table 5.16-6	LORS Applicable to Public Health	5.16-17
Table 5.16-7	Applicable Permits	5.16-21
Table 5.16-8	Agency Contacts	5.16-22
Table 5.17-1	Potential Worker Hazards During Facility Construction and Operation	5.17-3
Table 5.17-2	Basic Protective Equipment Guide	5.17-6

Table		Page
Table 5.17-3	Location of Potential Worker Hazards at the El Segundo	
	Generating Station (Operational Phase)	5.17-8
Table 5.17-4	Sample Emergency Response Plan Outline	5.17-14
Table 5.17-5	LORS Applicable to Worker Safety	5.17-20
Table 5.17-6	Agency Contacts	5.17-21
Table 5.17-7	Applicable Permits	5.17-21
Table 5.18-1	Typical Electric Field Values for Appliances (at 17 inches)	5.18-3
Table 5.18-2	Summary of Electric Field Calculations	5.18-13
Table 5.18-3	Summary of Electric Field Measurements and Calculations	5.18-14
Table 5.18-4	Magnetic Fields from Household Appliances	5.18-16
Table 5.18-5	Summary of Spot Room Measurements in the United States	5.18-17
Table 5.18-6	Percentage of U.S. Population with Average Field Exposure	
	Exceeding Given Values	5.18-18
Table 5.18-7	Average Magnetic Field Exposure During Work for	
	Different Occupations	5.18-18
Table 5.18-8	Summary of Loading Conditions Used for Magnetic Field	
	Calculations	5.18-24
Table 5.18-9	Summary of Magnetic Field Calculations	5.18-26
Table 5.18-10	Summary of Magnetic Field Measurements and Calculations	5.18-27
Table 5.18-11	State Regulations for Transmission Line Fields	5.18-34
Table 5.18-12	American Conference of Governmental Industrial Hygienists	5.18-34
Table 5.18-13	International Commission on Non-Ionizing Radiation Protection	5.18-35
Table 5.18-14	Calculated Induced Current for Objects near 230 kV Line	
	For Theoretical Conditions	5.18-37
Table 5.18-15	Average Ambient Sound Levels	5.18-40
Table 5.18-16	Typical Sound Levels for Common Sources in	
	A-Weighted Decibels	5.18-41
Table 5.18-17	Calculated Audible Noise Levels for the 230 kV	
	Transmission Line	5.18.43
Table 5.18-18	Calculated Radio Noise and Television Interference Levels	5.18-47
Table 5.18-19	LORS Applicable to Transmission Line Safety and Nuisance	5.18-51
Table 5.19-1	Plant Performance Summary	5.19-16
Table 5.20-1	El Segundo Power Redevelopment Project Cumulative	
	Projects List	5.20-3
Table 5.20-2	LORS applicable to Cumulative Impacts	5.21-14
Table 5.20.3	Agency Contacts	5.20-14

Figures	<u>F</u>	ollows Page
Figure 3.2-1	Location Map at Scale of 1:24,000	1-11
Figure 3.2-3	Arial View of El Segundo Generating Station	1-11
Figure 3.4-3A	Plant General Arrangement, Combined-Cycle Unit	1-11
Figure 3.4-3B	Plant General Arrangement, Looking Northwest	1-11
Figure 3.4-3C	Plant General Arrangement, Elevation Looking North	1-11
Figure 3.4-1	Plant Heat and Material Diagram (5 Sheets)	1-11
Figure 3.2-1	Location Map at Scale of 1:24, 000	3.2-1
Figure 3.2-2	Location Map at Scale of 1: $= 1,000^1$	3.2-1
Figure 3.2-3	Aerial View of El Segundo Generating Station	3.2-1
Figure 3.4-1	Plant Heat and Material Diagram (5 Sheets)	3.4-25
Figure 3.4-3A	Plant General Arrangement, Combined-Cycle Unit	3.4-25
Figure 3.4-3B	Plant General Arrangement, Looking Northwest	3.4-25
Figure 3.4-3C	Plant General Arrangement, Elevation Looking North	3.4-25
Figure 3.4-5	Preliminary Water Mass Balance, Maximum Daily Water Use	3.4-25
Figure 3.4-6	Preliminary Water Mass Balance, Average Daily Water Use	3.4-25
Figure 3.6-1	Generator Lead Pole Detail	3.6-6
Figure 3.6-1	1998 WSCC Summer Heavy Load Base Case NW/SW	
	Interchange Schedule	3.6-6
Figure 3.6-2	FCITC Limits Report with Base Case, Summer Heavy Loading	g S
	(3 Sheets)	3.6-6
Figure 3.6-3	1998 WSCC Light Autumn Load Base Case NW/SW	
	Interchange Schedule	3.6-6
Figure 3.6-4	FCITC Limits Report for the Light Autumn Base Case	
	(2 Sheets)	3.6-6
Figure 3.9-1	El Segundo 2x1 GE 7FA Combined Cycle Construction	
	and Startup Schedule (2 Sheets)	3.9-15
Figure 3.9-2	El Segundo Generating Facility Construction Workforce	3.9-15
Figure 4.3-1	Site Plan – Wet Cooling Tower	4.3-37
Figure 4.3-2	Site Plan – Air Cooled Tower	4.3-37
Figure 5.2-1	Project Location	5.2-84
Figure 5.2-2	January Predominant Mean Circulation of Surface Winds	5.2-84
Figure 5.2-3	April Predominant Mean Circulation of Surface Winds	5.2-84
Figure 5.2-4	July Predominant Mean Circulation of Surface Winds	5.2-84
Figure 5.2-5	October Predominant Mean Circulation of Surface Winds	5.2-84
Figure 5.2-6	Wind Rose for Lennox Monitoring Station 1981	5.2-84
Figure 5.2-7	Maximum Hourly Ozone Levels, West Los Angeles,	
	1990-1999	5.2-84
Figure 5.2-8	Violations of the California 1-Hour Ozone Standard	
	(0.09 ppm), West Los Angeles, 1990-1999	5.2-84
Figure 5.2-9	Maximum Hourly NO ₂ Levels, West Los Angeles, 1990-1999	5.2-84

Figures	<u>Fo</u>	llows Page
Figure 5.2-10	Maximum 8-Hour Average CO Levels, West Los Angeles,	
	1990-1999	5.2-84
Figure 5.2-11	Maximum Hourly CO Levels, West Los Angeles, 1990-1999	5.2-84
Figure 5.2-12	Maximum Hourly SO ₂ Levels, Hawthorne, 1990-1999	5.2-84
Figure 5.2-13	Maximum 24-Hour Average Sulfate Levels, Hawthorne,	
	1990-1999	5.2-84
Figure 5.2-14	Maximum 24-Hour Average PM ₁₀ Levels, Hawthorne,	
	1990-1999	5.2-84
Figure 5.2-15	Expected Violations of the California 24-Hour PM ₁₀ Standard	5.2-84
	$(50 \mu g/m^3)$, Hawthorne 1990-1999	5.2-84
Figure 5.2-16	Maximum 24-Hour Average PM _{2.5} Levels, North Long Beach,	
	1990-1999	5.2-84
Figure 5.2-17	Maximum 30-Day Average Lead Levels, Hawthorne,	
	1990-1999	5.2-84
Figure 5.2-18	Coordinate System Showing Gaussian Distributions	5.2-84
Figure 5.2-19	Receptor Grid	5.2-84
Figure 5.3-1	Geologic Map of Site Vicinity	5.3-44
Figure 5.3-2	Geologic Units in the Project Area	5.3-44
Figure 5.3-3	Relative Motions of Crustal Blocks in Southern California	5.3-44
Figure 5.3-4	Simplified Map of Quaternary Faults in Southern California	5.3-44
Figure 5.3-5	Large Earthquakes in Southern California of M≥≈6	5.3-44
Figure 5.3-6	Active Seismic Sources	5.3-44
Figure 5.4-1	Soil Map of Project Area	5.4-15
Figure 5.5-1	Intake and Discharge Conduits in the Project Vicinity ¹	5.5-59
Figure 5.5-2	Water Flow Schematic – El Segundo Generating Station	5.5-59
Figure 5.5-3	Predominant Surface Water Circulation Within the Southern	
	California Bight	5.5-59
Figure 5.5-4	Units 1 and 2 Intake and Outfall Terminal Structure Design	5.5-59
Figure 5.5-5	El Segundo Generating Station Units 1 and 2 Offshore Intake	
	Structure	5.5-59
Figure 5.5-6	Screenwell Structure Units 1 and 2	5.5-59
Figure 5.5-7	Screenwell Structure Units 1 and 2	5.5-59
Figure 5.5-8	Units 3 and 4 Intake and Outfall Terminal Structure Design	5.5-59
Figure 5.5-9	Cooling Water Discharge Profile – 1999	5.5-59
Figure 5.5-10	Maximum Thermal Loading Profile – 1999	5.5-59
Figure 5.5-11	Variation of the 1° F Above Natural Contour,	
	February 7 and 8, 1973	5.5-59
Figure 5.5-12	Winter 1999 Receiving Minimum and Maximum Water	
	Temperature Measurements – February 24, 1999	5.5-59
Figure 5.5-13	Summer 1999 Receiving Minimum and Maximum Water	
	Temperature Measurements – August 13, 1999	5.5-59

<u>Figures</u>	Follo	ows Page
Figure 5.5-14	Winter 1998 Receiving Minimum and Maximum Water	
\mathcal{E}	Temperature Measurements – April 10, 1998	5.5-59
Figure 5.5-15	Summer 1998 Receiving Minimum and Maximum Water	
C	Temperature Measurements – August 11, 1998	5.5-59
Figure 5.5-16	Winter 1997 Receiving Minimum and Maximum Water	
C	Temperature Measurements – April 26, 1997	5.5-59
Figure 5.5-17	Summer 1997 Receiving Minimum and Maximum Water	
C	Temperature Measurements – July 29, 1997	5.5-59
Figure 5.5-18	Far-Field Diameter of Thermal Plume (Approx. 1 degree	
C	Above Ambient)	5.5-59
Figure 5.5-19	Cooling Water Discharge Profile – ESPR Project	5.5-59
Figure 5.5-20	Maximum Thermal Loading Profile	5.5-59
Figure 5.6-1	Regional Map of Biological Resources	5.6-76
Figure 5.6-2	Simplified Flow of Water During a Heat Treatment Cycle	5.6-76
Figure 5.6-3	NPDES Ocean Monitoring Stations for ESGS and Scattergood	5.6-76
Figure 5.6-4	Units 1 and 2 Intake and Outfall Terminal Structure Design	5.6-76
Figure 5.6-5	Location of Sampling Stations at King Harbor, California	5.6-76
Figure 5.6-6	Special-Status Biological Resources	5.6-76
Figure 5.6-7	Biological Resources in the Vicinity of Parking and Staging Sites	5.6-76
Figure 5.6-8	Near-Shore Environment Within Santa Monica Bay	5.6-76
Figure 5.6-9	Predominant Surface Water Circulation Within the Southern	
C	California Bight	5.6-76
Figure 5.6-10	Annual Nitrogen Deposition-All Sources (Kg N/Ha-yr)	5.6-76
Figure 5.6-11	Summary of Benthic Station Monitoring Results ^{1,2}	5.6-76
Figure 5.7-1	Area of Gabrielino Ethnographic Occupation	5.7-84
Figure 5.7-2	Areas Surveyed for Archeological Resources	5.7-84
Figure 5.7-3	Areas Surveyed for Historic Built Environment Resources	5.7-84
Figure 5.7-4	Location of Older Buildings Within Zone of Alternatives for	
_	Route 1 – Water Supply Lines	5.7-84
Figure 5.7-5	Kramer Staging Area	5.7-84
Figure 5.8-1	Areas Surveyed for Paleontological Resources	5.7-30
Figure 5.9-1	Existing Land Uses within 1/2 Mile of Pipelines and	
	1 Mile of Plant Site	5.9-49
Figure 5.9-2	Sensitive Receptors within ½ Mile of Pipelines and 1	
	Mile of Plant Site	5.9-49
Figure 5.9-3	Existing Zoning Designations within ½ Mile of Pipelines	
	and 1 Mile of Plant Site	5.9-49
Figure 5.9-4	Existing General Plan Land Use Designations Within 1/2 Mile	
	Of Pipelines and 1 Mile of Plant Site	5.9-49
Figure 5.10-1	Census Tract Locations Within 6-Mile Radius	5.10-29
Figure 5.10-2	Low Income Population Within 6-Mile Radius	5.10-29

<u>Figures</u>	<u> </u>	Follows Page
Figure 5.10-3	Minority Population Within 6-Mile Radius	5.10-29
Figure 5.11-1	Regional Transportation Setting	5.11-28
Figure 5.11-2	Existing and Planned Roadways	5.11-28
Figure 5.11-3	Public and Air Transportation Facilities Serving Project	
\mathcal{C}	Study Area	5.11-28
Figure 5.11-4	Existing Commuter and Freight Railroad Lines	5.11-28
Figure 5.12-1	Sensitive Receptors Within a 2-Mile Radius of the	
\mathcal{C}	Project Area	5.12-36
Figure 5.12-2	Off-Site Noise Measurement Locations	5.12-36
Figure 5.12-3	Noise Measurement Locations Inside Property Boundaries	5.12-36
Figure 5.12-4	1/3 Octabe Band Spectral Data	5.12-36
Figure 5.12-5	ESPR Noise Contours Without and With Additional Noise	
	Mitigation	5.12-36
Figure 5.13-1	KOP Location and Viewing Direction	5.13-36
Figure 5.13-2a	Project Viewshed	5.13-26
Figure 5.13-2b	Project Viewshed	5.13-26
Figure 5.13-3	Present Site View Showing SCE Storage Tanks	5.13-26
Figure 5.13-4a	Existing View from KOP 1	5.13-26
Figure 5.13-4b	Simulated View from KOP 1 after Project Construction	5.13-26
Figure 5.13-4c	Intermediate View from KOP 1 Showing Unit 1 and 2 Remov	al 5.13-26
Figure 5.13-5a	Existing View from KOP 2	5.13-26
Figure 5.13-5b	Simulated View from KOP 2 after Project Construction	5.13-26
Figure 5.13-6a	Existing View from KOP 3	5.13-26
Figure 5.13-6b	Simulated View from KOP 3 after Project Construction	5.13-26
Figure 5.13-7a	Existing View from KOP 4	5.13-26
Figure 5.13-7b	Simulated View from KOP 4 after Project Construction	5.13-26
Figure 5.13-8a	Existing View from KOP 5	5.13-26
Figure 5.13-8b	Simulated View from KOP 5 after Project Construction	5.13-26
Figure 5.13-89	Simulated Plume Shown from KOP 1 (KOP 6)	5.13-26
Figure 5.14-1	Map of Sites Identified with Potential Environmental Concern	5.14-34
Figure 5.15-1	Sensitive Receptors Within a 2-Mile Radius of the Project Are	ea 5.15-26
Figure 5.15-2	Zone of Influence Isopleth for a Worst-Case Ammonia Releas	e
	from a Hypothetical Ammonia Pipeline Failure	5.15-26
Figure 5.16-1	Topographic Features Within a 10-Mile Radius of the	
	ESPR Facility	5.16-23
Figure 5.16-2	Sensitive Receptors Within a 2-Mile Radius of the Project Are	ea 5.16-23
Figure 5.18-1	Diagram of El Segundo Generating Stations with Field	
	Measurement Locations	5.18-5
Figure 5.18-2	Electric Field Measurements Along Perimeter of El Segundo	
	Switching Station Vista Del Mar (Profile 'A')	5.18-6

LIST OF FIGURES

<u>Figures</u>	<u>Fol</u>	lows Page
Figure 5.18-3	Electric Field Lateral Profile Measurements from El Segundo Switching Station Internal Station Line Across Vista Del Mar	
	(Profile 'B')	5.18-7
Figure 5.18-4	Electric Field Lateral Profile Measurements of Overhead	
	230 kV on Vista Del Transmission Lines Mar (Profile 'C')	5.18-8
Figure 5.18-5	Diagram of Typical Transmission Line Geometry for	
	Computer Modeling of Fields	5.18-10
Figure 5.18-6	Calculated Unperturbed Electric Field Values for the Typical	
	230kV Transmission Line Geometry	5.18-11
Figure 5.18-7	Magnetic Field Measurements Along Perimeter of El Segundo	
	Switching Station on Vista Del Mar (Profile 'A')	5.18-19
Figure 5.18-8	Magnetic Field Lateral Profile Measurements From El Segundo	
	Switching Station Line Across Vista Del Mar (Profile 'B')	5.18-20
Figure 5.18-9	Magnetic Field Lateral Profile Measurements of Overhead	
	230kV Transmission Lines on Vista Del Mar (Profile 'C')	5.18-21
Figure 5.18-10	Magnetic Field Values for the Typical 230 kV Transmission	
	Line Geometry	5.18-24
Figure 5.18-11	Calculated Audible Noise Levels for the 230 kV	
	Transmission Line	5.18-41
Figure 5.18-12	Calculated Radio Noise Profile for the 230 kV Transmission	
	Line	5.18-45
Figure 5.19-1	Plant Heat and Material Diagram (6 Sheets)	5.19-16
Figure 5.20-1	Location of Projects Considered in Cumulative Impact	
	Analysis	5.20-16